REMARKS

Claims 1-13 and 15 were presented for examination. Claims 1-13 and 15 were rejected. Claims 1, 2, 4, 12 and 13 have been amended. Support for the amendment can be found on page 10, [0031]. and page 11, [0035]-[0036]

Rejections Under 35 U.S.C. § 112

Claim 1 was rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 been amended to provide the intended relationship of the indicated subject matter to the rest of the claim. Applicants believe that claim 1 is no longer indefinite and request that the Examiner withdraw his rejection to claim 1.

Rejections Under 35 USC §103(a)

Claims 1, 2, 4, 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Funakubo in view of Watanabe et al. Applicants respectfully traverse.

Claim 1 recites "a fast scanning stage for a scanning probe microscope, said scanning probe microscope including a probe, said fast scanning stage comprising, at least one fixed support, and a sample stage having at least one axis of translation, said sample stage being affixed to said at least one fixed support by means for causing displacement of said sample stage relative to said probe, wherein said means for causing displacement is responsive to the application of a bias voltage of 100 volts or less and wherein said scanning probe microscope is a fast atomic force microscope (AFM) with a resonance frequency between about 250 Hz to about 7.5 kHz."

Funakubo recites an oscillation type stage device. However, Funakubo fails to disclose the "a fast atomic force microscope (AFM) with a resonance frequency between about 250 Hz to about 7.5 kHz." Funakubo is silent on the use of fast AFM. Watanabe relates to scanning tunneling microscopy. However, Watanabe also fails to disclose "a fast atomic force microscope (AFM) with a resonance frequency between about 250 Hz to about 7.5 kHz." Even though Watanabe indicates that AFM may be used (Col. 16, lines 16-17), Watanbe does not disclose the use of *fast* AFM in the specified range. Therefore, neither Funakubo nor Watanabe disclose the claimed feature.

Nor does the hypothetical combination of Funakubo and Watanabe suggest or teach "a fast atomic force microscope (AFM) with a resonance frequency between about 250 Hz to about 7.5 kHz." Because the hypothetical combination of Funakubo and Watanabe does not suggest or teach all the limitations of the claimed invention, Applicants submit that claim 1 is patentable over the prior art and request the Examiner withdraw his rejection to claim 1.

Independent claims 2, 4, 12 and 13 also recite " a fast atomic force microscope (AFM) with a resonance frequency between about 250 Hz to about 7.5 kHz" as recited in claim 1. Therefore, for the same reasons discussed above, Applicants submit that claims 2, 4, 12 and 13 are patentable over the prior art, and requests that the Examiner withdraw his rejection of claims 2, 4, 12 and 13.

Claims 3, 5 and 6 were rejected under 35 USC §103(a) as being unpatentable over Funakubo in view of Watanabe et al as applied to claim 2, and in view of Sarkar. Applicants respectfully traverse. Claims 3, 5 and 6 depend from the independent claim 2 either directly or ultimately. These dependent claims are patentable for the same reasons as presented above with respect to the claims from which they depend. Further, the dependent claims also include additional features that distinguish them from the prior art. For example, claim 3 recites that "said sample stage comprise four actuator elements supporting said sample stage." Funakubo

fails to disclose four actuator elements and Sarkar fails to disclose four actuator elements that support the sample stage. In contrast, Sarkar discloses four actuators (Fig. 2, elements 203a-d) coupled to four flexures (Fig. 2, elements 201a-d) that are then connected to a stage (Fig. 2, element 202). Therefore, Applicants submit that claims 3, 5 and 6 are also patentable over the prior art and request that the Examiner withdraw his rejection thereof.

Claim 7 was rejected under 35 USC §103(a) as being unpatentable over Funakubo in view Sarkar in view of Watanabe et al as applied to claim 6, and in view of Pai et al. Applicants respectfully traverse this rejection.

Claim 7 ultimately depends from independent claim 2. This dependent claim is patentable for the same reasons as presented above with respect to the claims from which it depends. Therefore, Applicants submit that claim 7 is also patentable over the prior art and request that the Examiner withdraw his rejection thereof.

Claim 8 was rejected under 35 USC § 03(a) as being unpatentable over Funakubo in view of Watanabe et al as applied to claim 2, and in view of Elings. Applicants respectfully traverse.

Claim 8 directly depends from independent claim 2. This dependent claim is patentable for the same reasons as presented above with respect to the claims from which it depends. Therefore, Applicants submit that claim 8 is also patentable over the prior art and request that the Examiner withdraw his rejection thereof.

Claims 9 and 10 were rejected under 35 USC §103(a) as being unpatentable over Funakubo in view of Watanabe et al as applied to claims 2 and 3 and in view of Zdeblick. Applicants respectfully traverse.

Claims 9 and 10 depend from independent claim 2 either directly or ultimately. These dependent claims are patentable for the same reasons as presented above with respect to the claims from which they depend. Further, the dependent claims also recite additional features that

distinguish them from the prior art. For example, claims 9 and 10 discloses that "said at least one actuator element comprises a PZT bimorph." Funakubo does not disclose a PZT biomorph actuator and Zdeblick does not disclose a stage supporting actuator element. Therefore, Applicants submit that claims 9 and 10 are also patentable over the prior art and request that the Examiner withdraw his rejection thereof.

Claim 11 was rejected under 35 USC §103(a) as being unpatentable over Funakubo in view of Waranabe et al as applied to claim 1, and in view of Marchman. Applicants respectfully traverse this ground of rejection.

Claim 11 directly depends from independent claim 1. This dependent claim is patentable for the same reasons as presented above with respect to the claims from which it depends. Further, the claim 11 also recites additional features that distinguish it from the prior art. For example, both Funakubo and Marchman fail to disclose a "sample stage ... comprised of a material selected from the group consisting of ... heat resistant polymers, and anodized aluminum." Therefore, Applicants submit that claim 11 is also patentable over the prior art and request that the Examiner withdraw his rejection thereof.

Claim 15 was rejected under 35 USC §103(a) as being unpatentable over Funakubo in view of Watanabe et al as applied to claim 13 and in view of the publication of Ando et al. Applicants respectfully traverse this ground of rejection.

Claim 15 directly depends from the independent claim 13. This dependent claim is patentable for the same reasons as presented above with respect to the claims from which it depends. Therefore, Applicants assert that claim 15 is also patentable over the prior art and request that the Examiner withdraw his rejection thereof.

CONCLUSION

For the above reasons, Applicants respectfully submit that the above claims as amended represent allowable subject matter. The Examiner is encouraged to contact the undersigned to resolve efficiently any formal matters or to discuss any aspects of the application or of this response. Otherwise, early notification of allowable subject matter is respectfully solicited.

Respectfully submitted,

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